Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	§	
	§	
Wireless E911 Location Accuracy Requirements	§	PS Docket No. 07-114
	§	

REPLY COMMENTS OF THE TEXAS 9-1-1 ENTITIES

The Texas 9-1-1 Alliance,[1] the Texas Commission on State Emergency Communications,[2] and the Municipal Emergency Communication Districts Association[3] (collectively, the "Texas 9-1-1 Entities") respectfully submit the following reply comments regarding the Federal Communications Commission (the "Commission") Public Notice ("Notice")[4] in the above-referenced proceeding. The Notice seeks comment on the +/- 5 meters vertical z-axis accuracy metric for 80% of fixes proposed by CTIA in its recent Cover Letter[5] on behalf of the nationwide wireless carriers based on the 9-1-1 Location Technologies Test Bed, LLC, Report on Stage Z ("Report").[6]

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[1] The Texas 9-1-1 Alliance is an interlocal cooperation entity composed of 26 Texas emergency communication districts with E9-1-1 service and related public safety responsibility for more than 63% of the population of Texas. These emergency communication districts were created pursuant to Texas Health and Safety Code Chapter 772 and are defined under Texas Health and Safety Code Section 771.001(3)(B).

[2] The Texas Commission on State Emergency Communications ("CSEC") is a state agency created pursuant to Texas Health and Safety Code Chapter 771, and by statute is the state program authority on emergency communications. CSEC's membership includes representatives of the Texas 9-1-1 Entities and the general public, and directly oversees and administers the Texas state 9-1-1 program under which 9-1-1 service is provided in 206 of Texas' 254 counties, covering approximately two-thirds of the state's geography and one–fourth of the state's population.

[3] The Municipal Emergency Communication Districts Association ("MECDA") is an association of 26 municipal emergency communication districts, as defined under Texas Health and Safety Code Section 771.001(3)(A), that are located primarily in the Dallas-Fort Worth area.

[4] See, Public Safety and Homeland Security Bureau Seeks Comments on Vertical (Z-Axis) Accuracy Metric Proposed by the Nationwide Wireless Carriers, PS Docket No. 07-114, Public Notice (rel. Sept. 10, 2018) (available at https://www.fcc.gov/document/pshsb-seeks-comment-z-axis-metric-proposed-wireless-carriers).

[5] Letter from Scott K. Bergmann, Senior Vice President of Regulatory Affairs, CTIA, et al., to Marlene H. Dortch, Secretary, FCC (Aug. 3, 2018) ("CTIA Cover Letter") (*available at* https://www.fcc.gov/ecfs/filing/10803074728956).

[6] 9-1-1 Location Technologies Test Bed, LLC, Report on Stage Z ("Report"), (*available at* https://www.fcc.gov/ecfs/filing/10803074728956).

I. Adoption of a vertical z-axis accuracy metric greater than +/- 3 meters for 80% of wireless calls to 9-1-1 emergency services is not supported by a reasonable reading of the results in the Report, would not satisfy the critical requirements of public safety, and may potentially undermine the Commission's dispatchable location requirements.

In response to the CTIA Cover Letter proposing a vertical z-axis accuracy metric of +/- 5 meters for 80% of wireless calls to 9-1-1 emergency services, both the National Emergency Number Association ("NENA") and the Association of Public-Safety Communications Officials-International, Inc. ("APCO") pointed out that: (i) a z-axis standard of +/- 3 meters for 80% of fixes (what the Commission and others have previously referred to as essentially "floor level") is achievable using current technologies; and (ii) any greater amount of vertical z-axis deviation in meters is neither sufficiently supported by the Report nor precise enough for 9-1-1 purposes.[7] The Texas 9-1-1 Entities agree with NENA and APCO on these critically important points.

The Report clearly states that the testing of the Polaris solution most likely underestimates the results that might be achieved using an effective continuous calibration, which both Polaris and NextNav indicated would have put the Polaris solution results within +/- 2.8 meters, similar to the NextNav solution results.[8] In addition, statements in the CTIA Cover Letter indicating that the NextNav solution was not tested in rural environments appear to be misplaced, considering (as pointed out by NextNav) the Commission rule on z-axis applies only to the top 25 CMAs by 2021 and the top 50 CMAs by 2023.[9] Similarly, the Report's reliance on paragraphs 4 and 170 of the

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[7] *See*, NENA Initial Comments at pp. 2-4; *see also*, APCO Initial Comments at pp. 2-5.

[8] *See*, Polaris Ex Parte (Sept. 10, 2018), at pp. 2-3 (*available at* https://ecfsapi.fcc.gov/file/10910939013527/Polaris%20Wireless%20Ex%20Parte%20Notice%206%20Sep%202018.pdf); *see also*, NextNav Initial Comments at p. 7 ("Polaris separately indicated that it will use active sensor bias compensation in real world conditions, thus making it appropriate to account for this capability in testing. Given these facts, it is reasonable and appropriate to conclude that the Stage Z test process confirmed, once again, that existing location technologies available from multiple vendors can reliably achieve floor level vertical accuracy within +/- 3 meters for at least 80 percent of wireless calls to E911 emergency services").

[9] NextNav Initial Comments at pp. 24-25.

Commission's Fourth Report and Order as a basis for results "achievable across the entirety of carrier networks" appears to be a misreading of those two paragraphs.[10] Paragraph 4 of the Commission's Fourth Report and Order involved the technological feasibility and neutrality of the Commission's rules,[11] while paragraph 170 involved the recognized cost paradigm associated with those rules.[12] Expanding the current vertical z-axis issue to something "achievable across the entirety of carrier networks" for purposes of establishing the vertical z-axis accuracy metric for the top 25 CMAs by 2021 and the top 50 CMAs by 2023 is not a proper consideration.

The Texas 9-1-1 Entities share the concern raised by APCO that adopting the too lenient metric of +/- 5 meters for 80% of fixes as proposed in the CTIA Cover Letter could turn what was only intended as a "backstop"[13] to ensure dispatchable location solutions are actually achieved into an unintended loophole, potentially undermining the Commission's dispatchable location requirements.[14] Moreover, some urge that the Commission should set the vertical z-axis accuracy

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[10] *See*, Report at pp. 5 and 123 ("Consistent with the FCC's *Fourth Report & Order* (¶ 4 and ¶ 170), the proposed Z-Axis metric must be vendor-neutral **and achievable across the entirety of carrier networks** within the timeframe prescribed by Commission rules." [emphasis added]).

[11] *See*, Wireless E911 Location Accuracy Requirements, Fourth Report and Order, 30 FCC Rcd 1259 (2015) ("Fourth Report and Order") at ¶ 4 ("The requirements we adopt are technically feasible and technologically neutral, so that providers can choose the most effective solutions from a range of options").

[12] Fourth Report and Order at ¶ 170 ("This indicates that there are solutions available to achieve the indoor wireless location accuracy standards we adopt today at a cost that is far less than their $92 billion minimum benefit floor. Finally, we acknowledge that the costs imposed by the rules we adopt today may present a proportionately greater burden to smaller CMRS providers, including the costs associated with participation in the test bed. So, although the cost of meeting our indoor location accuracy rules has not yet been determined to a dollar amount, commenters provide the Commission with a paradigm for understanding the shape that such costs will take." [footnotes in original omitted]).

[13] Fourth Report and Order at ¶ 162 ("by providing a z-axis metric as a backstop to dispatchable location for identifying floor level of 911 calls from multi-story buildings, we ensure that vertical location accuracy is achieved within the timeframe laid out by the Roadmap").

[14] *See*, APCO Initial Comments at p. 5 ("Adopting the carriers' proposal would likely result in the abandonment of dispatchable location solutions ... A z-axis metric that's more conservative than what's readily achievable today gives the carriers little reason to invest in dispatchable location").

metric at +/- 2 meters (instead of +/- 3 meters).[15] To the extent that the current level of disappointment with the CTIA Cover Letter subsides,[16] while there may be sufficient justification to continue test bed work to evaluate whether to adopt a vertical z-axis metric below +/- 3 meters, we agree with NENA that Q4 of 2019 as the earliest window for such additional testing is totally unacceptable for purposes of establishing a standard for the top 25 CMAs by 2021 and the top 50 CMAs by 2023.[17] If needed to expedite further testing in a timely manner, the Commission should evaluate whether to require that there be additional test bed areas, a requirement that there be a test bed area within Texas.

II. It is premature for the Commission to preclude the use of either wireless dispatchable location solutions or wireless vertical z-axis solutions, and the Commission should do everything to encourage better representation of dispatchable location granularity levels for PSAPs desiring to deploy such via new Classes of Service.

BRETSA indicates that it "believes that wireless caller locations are best provided to a PSAP as geographic coordinates, with confidence and uncertainty data."[18] On the other hand, APCO comments that, given "the carriers' failure to propose a z-axis metric that meets at least floor level accuracy … the Commission should make clear that the carriers must comply with its vertical location accuracy requirements by providing dispatchable location."[19] We understand the BRETSA preference for accurate geographic coordinates, with confidence and uncertainty

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[15] *See, e.g.*, Boulder Regional Emergency Telephone Service Authority ("BRETSA") Initial Comments at p. 4.

[16] *See*, APCO Initial Comments at p. 5 ("The Carriers' Proposal is Unjustified and Shows a **Lack of Good Faith**" [emphasis added]).

[17] NENA Initial Comments at p. 4-5 (Based on discussions with CTIA, NENA understands that the Test Bed's soonest available testing windows for z-axis estimation are in Q4 of 2019 – should the Commission allow an extension of the deadline for CTIA's z-axis recommendation, this testing schedule is **unacceptable**" [emphasis added].

[18] BRETSA Initial Comments at p. 8.

[19] APCO Initial Comments at p. 6.

corroboration, and share APCO's frustration with the CTIA Cover Letter and similar frustration expressed by the National Public Safety Telecommunications Council ("NPSTC") that the CTIA Cover Letter recommendation is unacceptable.[20] However, given that (1) the National Emergency Address Database ("NEAD") is not expected to start being available for dispatchable location use nationwide until sometime in 2019, (2) to date no PSAPs in Texas have been included as part of NEAD test bed areas, and (3) the level of location accuracy and its corroboration and reliability is ultimately of the utmost importance, the Texas 9-1-1 Entities respectfully submit that it is premature for the Commission to make any final determinations on the use of dispatchable location solutions vs. geographic coordinate solutions. Moreover, it is possible that at some point in the future the Commission may expect all communications service providers to use both dispatchable location solutions and geographic coordinate solutions together, along with the use of newer device-based hybrid location solutions.

Additionally, NPSTC criticizes the ATIS standard use of DL Level 2 and DL Level 1, and contends that the existence of these two distinct levels is likely to create confusion. We respectfully disagree. Using E9-1-1 Classes of Service ("CoS")[21] to notify telecommunicators

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[20] NPSTC Initial Comments at p. 5.

[21] *See*, NENA STA-015.10-2018 (Originally 02-010), *NENA Standard Data Formats for E9 1 1 Data Exchange & GIS Mapping* (Aug. 12, 2018) (*available at* https://www.nena.org/page/DataFormats) at p. 22:
2.2.1 Additional Guidance on the three Classes of Service for Wireless Network Services displaying Civic Address as Primary ALI .
Three new wireless CoS are being established for use when a wireless 9-1-1 call provides civic oriented data from the National Emergency Address Database (NEAD) and from other sources. The three are as follows:

- WDL2 indicates a wireless 9-1-1 call that provides civic oriented data (address and sub-address location [where appropriate]) in addition to traditional WPH2 geodetic X, Y and Uncertainty data associated with the caller's location (where available). When this CoS is used, it indicates the civic oriented data is expected to meet the highest quality level criteria to be dispatchable, and indicates that the sub-address location within the building address is very close to the caller's location.
- WDL1 indicates a wireless 9-1-1 call that provides civic oriented data (address and building zone [where appropriate]) in addition to traditional WPH2 geodetic X, Y and Uncertainty data associated with the caller's location (where available). When this CoS is used, it indicates the civic oriented data is expected to meet the medium-quality level criteria to be dispatchable by building zone but also indicates a less detailed location than WDL2.

regarding the level of granularity in a civic address may be helpful additional information that can aid in more quickly locating and responding to the 9-1-1 caller. For example, if a person suffered a heart attack in one of the restrooms down the hall from the Commission's meeting room, the most desirable and highest level of dispatchable location would be the exact room (which could be WDL2 level of information). But obtaining the dispatchable location for a zone within the building (which could be WDL1 level of information) might still be more precise 9-1-1 caller location information than x, y coordinates within 50 meters and z-axis with +/- 3 meters. In addition, even the Commission's general building address (which could be the WCVC level of information) might potentially be more helpful 9-1-1 caller location information than x, y coordinates within 50 meters and z-axis with +/- 3 meters. Accordingly, the Commission should do everything to encourage better representation of dispatchable location granularity levels for PSAPs desiring to deploy such via new Classes of Service.

III. Conclusion

The Texas 9-1-1 Entities appreciate the opportunity to provide the foregoing reply comments on these matters, and respectfully request that the Commission take action in this proceeding a manner consistent with these reply comments.

• WCVC indicates a wireless 9-1-1 call that provides civic oriented data (address) in addition to traditional WPH2 geodetic X, Y and Uncertainty data associated with the caller's location (where available). When this CoS is used, it indicates the civic oriented data is not expected to meet the criteria to be dispatchable by either building zone (WDL1) or sub-address location (WDL2).
With regard to these three new CoS for wireless network services displaying civic address as the primary ALI, the current implementation expectation is for 9-1-1 customer premises equipment (CPE) to use existing ALI display fields. But other implementation issues (such as the specific location logic between the three CoS quality levels using the criteria from the NEAD, additional telecommunicator training, integration and relationship with display of the WPH1 cell tower location, and potential changes to 9-1-1 mapping configurations) SHOULD remain under review for additional work, testing, and further recommendations by NENA and other stakeholders. Moreover, as the quality level of WPH2 location indoors may be enhanced in the future independent from the NEAD, there may be additional factors to consider down the road on such implementation issues.

Respectfully submitted,

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